

High Voltage Test Services





HV Test Services

Manitoba Hydro International Ltd. (MHI) provides commercial high voltage testing services for equipment rated up to 550 kVac and 500 kVdc.

In association with Manitoba Hydro's High Voltage Test Facility, we provide robust quality assurance test programs for a wide variety of high voltage electrical equipment and materials in accordance with IEEE, ANSI, IEC, and CSA standards. Test services are tailored to meet the specialized needs of customers including electric utilities, heavy industry, and academic research institutions.

Our Expertise

We perform all testing at Manitoba Hydro's leading-edge High Voltage Test Facility. Staffed by the utility's professional engineers and technicians, our team has over 20 years of experience in insulation testing and diagnostics on rotating machines and electrical apparatus.



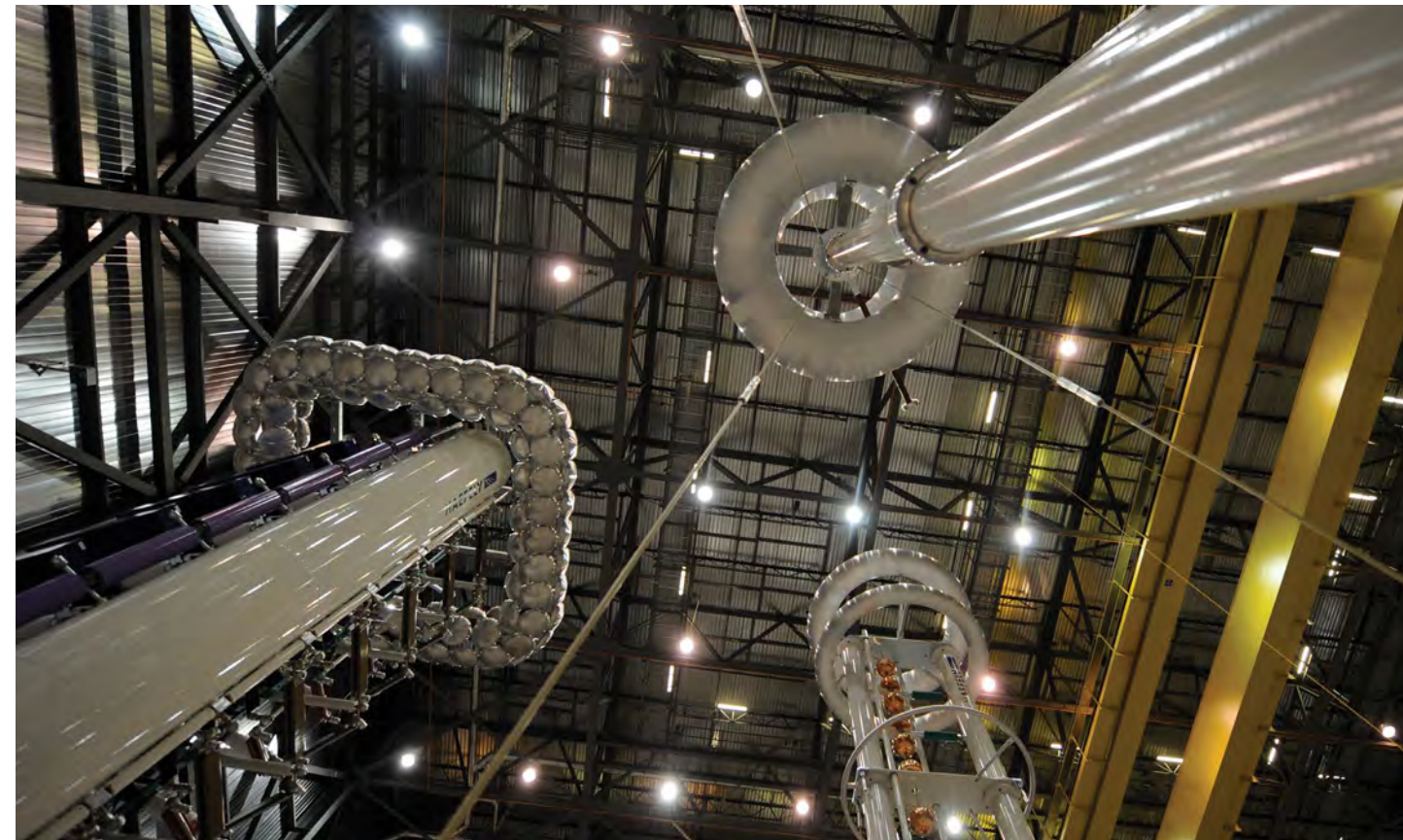
The High Voltage Test Facility

Manitoba Hydro's High Voltage Test Facility is located in Winnipeg, Canada, near the geographical centre of North America. Before opening in 2011, years of planning went into the design and construction of the facility, resulting in an ideal testing environment.

Special build features include:

- Test hall metallic inner lining has been solidly bonded by means of tack welding every 60 cm to ensure electromagnetic shielding and provide a partial discharge (PD) free environment down to 2 pC.
- 155 pre-cast concrete pilings with steel reinforcement installed to ensure ultra-low impedance grounding ideal for impulse testing.

Consisting of the main test hall, material test laboratory, chemical laboratory, and office space, the facility is ISO 14001:2004 certified for Environmental Management Systems.



Main Test Hall

The main test hall measures 41 m (135 ft.) x 38 m (125 ft.) and features specialized equipment, including:

- 800 kV, 5 A, 60 Hz alternating current (AC) series resonant test supply;
- $\pm 1,200$ kV, 20 mA direct current (DC) test supply with automatic polarity reversal;
- $\pm 2,400$ kV, 360 kJ impulse generator complete with multiple chopping gap;
- Three-phase variable frequency power transformer test system;
- Synchronous multi-channel PD measurement systems.

The main test hall features:

- Rail access directly into the hall complete with heavily reinforced concrete floor;
- A 10 metric ton bridge crane;
- A 21 m (69 ft.) clearance between floor and bridge crane;
- Engineered electromagnetic shielding, which allows partial discharge measurements down to 2 pC.

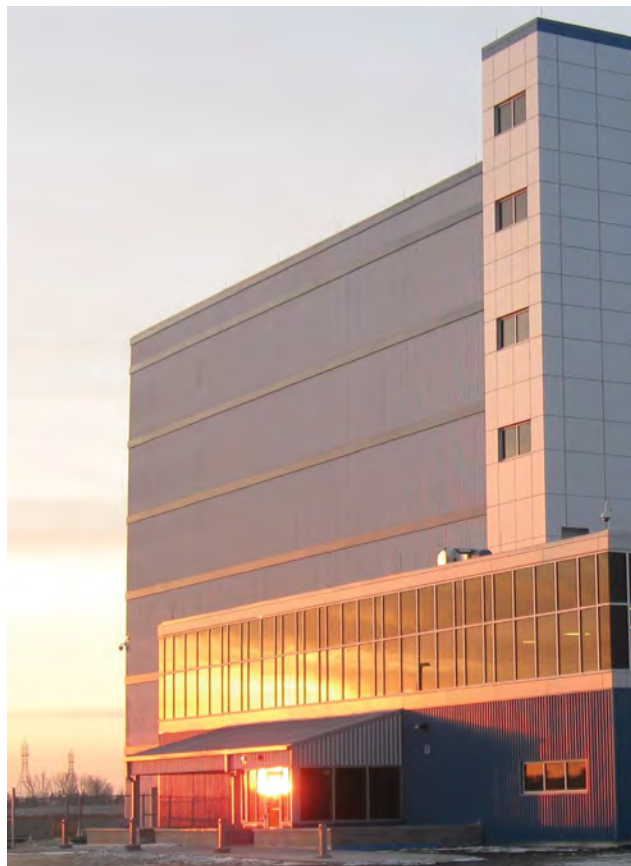


Material Test Laboratory

The material test laboratory consists of accelerated aging facilities for stator bars and coils, including:

- 50 V, 60 Hz, 6,000 A supply for thermal cycling;
- 50 kV, 60 Hz, 28 kVA supply for voltage endurance with inductive compensation;
- Unity power-factor voltage regulator.

The High Voltage Test Facility offers unparalleled service and industry recognized expertise in the performance of thermal cycling and voltage endurance testing.



Services

Frequent test services performed include:

- Corona and RIV testing on transmission line hardware;
- Transformer type and acceptance testing;
- Customized certification testing;
- Accelerated aging testing;
- Field testing;
- Customizable tests to meet customer requirements.



Equipment Tested

The High Voltage Test Facility is capable of testing a wide variety of equipment rated up to 550 kVac and 500 kVdc, including:

- Insulators and line hardware;
- Instrument transformers;
- Apparatus bushings and wall bushings;
- Power transformers;
- Vehicle-mounted aerial devices for live-line work;
- Generator and motor winding insulation systems.



Contact

We are committed to providing exceptional high voltage testing services. Our team of professionals will apply their extensive knowledge and experience to ensure you receive the best possible service.

Contact us today to discuss your testing requirements.

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For more information, visit:
mhi.ca

